REMARKS

Upon entry of the present amendment, claims 1, 8, 9, 11, 14, 16, 17 and 18 will have been amended. The claim amendments do not narrow the scope of the claims but merely clarify the language thereof. Applicant respectfully requests reconsideration of the outstanding rejection and an indication of the allowability of all of claims pending in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

Initially, Applicant respectfully wishes to thank the Examiner for accepting the drawings filed in the present application on October 17, 2003. Applicant further wishes to thank the Examiner for considering the documents cited in the Information Disclosure Statement filed in the present application on January 22, 2004, and for confirming such consideration by attaching a signed and initialed copy of the PTO 1449 Form attached to the above-noted Information Disclosure Statement to the outstanding Official Action in the present application.

However, Applicant notes that the Examiner did not acknowledge Applicant's claim for foreign priority under 35 U.S.C. § 119. In this regard, Applicant notes that the Applicant has filed a claim of priority, together with a certified copy of the Japanese application upon which the above noted claim for priority is based. In particular, on October 17, 2003, concurrently with the filing of the present application, Applicant filed a certified copies of Japanese Application No. 2002-305892 filed on October 21, 2002.

Accordingly, Applicant respectfully requests that the Examiner acknowledge his claim for foreign priority under 35 U.S.C. § 119 and confirm receipt of the certified copies of the foreign priority document. The Examiner is respectfully thanked in advance for his attention to this matter.

In the outstanding official action, the Examiner rejected claims 1, 3, 4, 11, and 13 under 35 U.S.C. § 103 as being unpatentable over YOSHIKAWA et al. (U.S. Patent No. 5,163,063 in view of ARAKI (U.S. Patent No. 5,418,806). The Examiner rejected claims 2, 12, 19, and 20 under 35 U.S.C. § 103 as being unpatentable over YOSHIKAWA et al. in view of ARAKI and further in view of TAKESUE (U.S. Patent Publication No. 2005/0093969). Claims 5-8 and 14-16 were rejected under 35 U.S.C. § 103 as unpatentable over YOSHIKAWA et al. in view of ARAKI and further in view of SUDA (U.S. Patent No. 6,566,641). Claims 9, 10, 17 and 18 were rejected under 35 U.S.C. § 103 as being unpatentable over YOSHIKAWA et al. in view of ARAKI, SUDA and further in view of CALL et al. (U.S. Patent No. 5,309,461).

Applicant respectfully traverses each of the above noted rejections and submits that they are inappropriate with respect to the combination of features recited in each of Applicant's claims. Accordingly, Applicant respectfully requests reconsideration and withdrawal of each of the outstanding rejections, together with an indication of the allowability of all the claims pending in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

Applicant's invention is directed to a laser scanning device. The laser scanning device includes a semiconductor laser that emits a laser beam and a laser power detector that detects a laser beam power of the semiconductor laser. A reference voltage generator generates a reference voltage for controlling the laser beam power of the semiconductor laser in accordance with a laser power control signal provided from an external device. A laser driver compares the reference voltage generated by the reference voltage generator and the laser beam power detected by the laser power detector to control a driving current supplied to the semiconductor laser for emitting the laser beam. An abnormal condition detector detects the laser power control signal received by the reference voltage generator

and prevents the laser driver from operating when the laser power control signal differs from a predetermined signal.

The above-noted combination of features, as defined by the combination of features recited, e.g., in claim 1, as well as by the combinations of features recited in Applicant's claims 11 and 19 are not taught by or rendered obvious by any of the references cited by the Examiner, whether considered alone or whether considered in any proper combination. Accordingly, Applicant respectfully requests reconsideration and withdrawal of each of the rejections set forth in the outstanding official action.

Initially, Applicant notes that the laser power control signal recited in Applicant's claim 4 is explicitly set forth as being "provided from an external device". It is respectfully submitted that neither of the references relied upon by the Examiner to reject claim 1 disclose at least this feature. In this regard, Applicant notes that the Examiner has explicitly admitted that this feature is not taught by the primary reference relied upon in the outstanding Official Action. However the Examiner relies on Figure 3 of AKIRA for teaching this feature. It is respectfully submitted that the Examiner is incorrect.

Figure 3 of ARAKI discloses a reference voltage generator 14 with a data input thereto. Figure 4 discloses the details of the reference voltage generator and shows that a clock generator is provided. However, as is clearly set forth in AKIRA, Column 4, lines 39 through 49, the clock generator, based on data input, merely outputs a pulse shaped clock signal with a duty cycle in accordance with the inputted data. However, a clock signal is not "a laser power control signal" that is required by the recitations of Applicant's claim.

Additionally, neither the clock generator nor the "data input" thereto, can be considered as "provided from an external device". In this regard, Applicant respectfully directs the Examiner's attention to column 4, lines 34-38 of ARAKI. Thereat, it is explicitly

disclosed that Figure 4 shows the reference voltage generating circuit, which is "contained within the reference voltage generator 14". Thus, contrary to the Examiner's assertion, it is absolutely clear that no portion of Figure 4 is "an external device" as recited and required by the recitations of Applicant's claim 1.

Accordingly, for each of the above reasons, and certainly for both of the above reasons it is respectfully submitted that Applicant's claim 1 is clearly patentable over the combination of references applied by the Examiner thereagainst.

Applicant further submits that the disclosure of YOSHIKAWA et al. is also inadequate and insufficient to teach those features for which the Examiner relied thereupon. In this regard, Applicant notes that the YOSHIKAWA et al. outputs an abnormal signal, when the laser beam intensity exceeds the intensity corresponding to the reference voltage. In direct contrast, the present invention does not prevent the laser driver from operating based on a comparison of the beam intensity and the reference voltage. Rather, and as explicitly set forth in Applicant's claim 1, the abnormal condition detector detects the "laser power control signal" previously recited as "provided from an external device" and prevents the laser driver from operating when the laser power control signal "is different than a predetermined signal". Thus, Applicant's invention involves, not the reference voltage, but a "predetermined signal" in determining whether the laser driver should operate or not. For this additional reason, it is respectfully submitted that YOSHIKAWA et al. is an inappropriate basis for the rejection of any claims in the present application.

According to the features of the present invention, the reference voltage and the laser beam power are compared in controlling the driving current applied to the semiconductor laser. On the other hand, in preventing the laser driver from operating, the

laser power control signal is detected and whether it differs from a predetermined signal is detected. According to the features of the present invention, it is "a predetermined signal" not the "reference signal" that is used in determining an abnormal condition.

This feature of Applicant's invention can clearly be seen in Figure 6, step S105, where the comparison that is utilized in determining whether the laser driver should operate or should be stopped from operating, is not based upon the reference voltage generated in step S104.

For each of these additional reasons, it is respectfully submitted that Applicant's claim 1 is clearly patentable over the combination of references relied upon by the Examiner.

Regarding independent claims, 11 and 19, the shortcomings and deficiencies of YOSHIKAWA et al. applies equally well thereto. Additionally, Applicant notes that these claims additionally deal with a connector having a least one input terminal connectable to an external device for receiving a control signal and a detector that examines a connection between the input terminal and the external device, (as in claim 11), and an input terminal connectable to an external device for receiving a control signal and a detector that examines the connection between the input terminal and the external device (as in claim 19). It is respectfully submitted that none of the references relied upon in the rejection of claims 11 and 19 contain at least the above noted features, in the claimed combinations.

In setting forth the rejection of claim 11, the Examiner asserts that at column 4, lines 4-11, YOSHIKAWA et al. discloses a detector (104) that examines the connection between the input terminal and the external device. It is respectfully submitted that the Examiner is incorrect in his interpretation of the YOSHIKAWA et al. document. No part of column 4, lines 4-11 relate to a detector that examines a connection between an input terminal and

the external device. Rather, this portion of YOSHIKAWA et al. merely describes the abnormality detecting circuit 104 as being connected to the monitoring circuit 101 for comparing the monitor signal with a limit signal which is different than the reference signal source to detect abnormality to thereby output an abnormality signal LDNG.

The deficiencies of YOSHIKAWA et al. are even more explicit since the Examiner later admits that YOSHIKAWA et al. does not disclose an external device. Thus, it is clear that YOSHIKAWA et al. certainly cannot examine the connection between the input terminal and the external device.

For each (and certainly for all) of the above noted reasons, it is respectfully submitted that each of Applicant's independent claims, and certainly each of Applicant's depending claims are clearly patentable over the Examiner's proposed combinations of references.

Accordingly, reconsideration and the withdrawal of each of the outstanding rejections is respectfully requested in due course, together with an indication of the allowability of claims pending herein, in due course.

In addition to the above noted deficiencies of the references relied upon by the Examiner, Applicant respectfully submits that the Examiner has not set forth a proper motivation for the proposed combination. In this regard, the Examiner has merely set forth, for each of proposed combinations, that it would have been obvious to combine the references as indicated. It is respectfully submitted that the statement made by the Examiner is just the ultimate desired conclusion. However, the Examiner has not provided any motivation or evidence to support his asserted conclusion. Accordingly, for this additional reason, it is respectfully submitted that the Examiner's various combination rejections are inadequate and insufficient.

SUMMARY AND CONCLUSION

Applicant has made a sincere effort to place the present application in condition for allowance and believes that he has now done so. Applicant has amended the claims in the present application to clarify the limitations thereof without the significantly narrowing the scope thereof, and not in view of the prior art. Thus, Applicant's amendment should not give rise to any prosecution history estoppel.

Applicant discussed the features of Applicant's invention as described in the various embodiments and has pointed out the significant and substantial shortcomings and deficiencies of the cited references with respect thereto. Applicant is also discussed the explicit recitations of Applicant's invention and has pointed out the deficiencies of the references with respect thereto. Applicant has described the disclosures of the outstanding references and has pointed out the their shortcomings with respect to the features of Applicant's invention. Thus, Applicant has provided a clear evidentiary basis supporting the patentability of the pending claims.

The amendments to the claims which have been made in this response, have not been specifically noted to overcome a rejection based upon the prior art, and should thus be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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